

The Industry



BLACK BRANT ROCKET, one of four launched by DRB from Churchill last September, gets away successfully. The 24-ft. propulsion test vehicles were developed by CARDE and were intended to test solid propellant fuels for use in future Canadian research rockets for upper atmospheric studies.

Orenda Awards Subcontracts

Orenda Engines Ltd., has awarded 179 subcontracts to firms in Renfrew, Ont., Winnipeg, Toronto and Montreal.

Renfrew Aircraft & Engineering Co. Ltd., Renfrew, received a subcontract for rings and clips valued at \$27,047 and a later one valued at \$111,000 for levers and associated tooling. These subcontracts brought the total value of orders received by this firm under this program to \$526,429.

Aeroquip (Canada) Ltd., Toronto, was awarded a contract for hoses valued at \$290,520 raising its total subcontracts with Orenda to \$566,656.

Lucas-Rotax Ltd., Toronto, received a contract for the manufacture, under licence, of pumps and associated tooling, valued at \$473,000.

Jarry Hydraulics Ltd., Montreal, received a subcontract for filters valued at \$213,510.

Bristol Aero-Industries Ltd., Winnipeg, will produce cones and associated tooling valued at \$92,000.

Vertol Sale Approved

Shareholders of Vertol Aircraft Corp. have approved the plan for the acquisition of Vertol by Boeing Air-

plane Co. Under the terms of the plan approved by the boards of both companies, Vertol shareholders will be issued two shares of Boeing for three shares of Vertol.

Vertol's wholly-owned subsidiaries, Allied Research Associates Inc., Boston, and Canadian Vertol Aircraft Ltd., Arnprior, Ont., will become subsidiaries of Boeing. Canadian Vertol will report to the Vertol Division of Boeing in Morton, Pennsylvania.

1959 Production Sharing

The Canada-U.S. defence production sharing agreement brought Canadian manufacturers \$96,300,000 in contracts during 1959, first full year of operation, Defence Production Minister O'Hurley told the Commons Jan. 28.

He said these figures give "tangible grounds for optimism" that the production sharing program will be successful.

The 1959 total included \$51 million for prime contracts and \$45,300,000 for subcontracts. Excluded from these amounts were \$25 million worth of other contracts for construction, maintenance, petroleum, communications and general services.

In 1958, U.S. contracts worth \$37,-

900,000 were filled by Canadian manufacturers. In 1957 the total was \$58,700,000 but this included a \$33,100,000 payment by the U.S. toward CF-100's for Belgium.

Mr. O'Hurley said his department has helped to arrange visits by Canadian manufacturers to the U.S. and by American defence builders to Canada. The result had been general agreement by U.S. prime contractors that the Canadian industry had "sound capabilities" and could be of definite use. American defence contractors during 1959 invited about 1,900 bids. Canadian manufacturers submitted 1400 tenders and 365 were accepted.

Avro Lab Services

Avro Aircraft Ltd. has announced that the company's experimental engineering laboratories are now being made available for aeronautical, or general commercial and industrial utilization. Further information and brochures covering the facilities, can be had by writing E. J. Lynch, Chief Test Engineer, Avro Aircraft Ltd., Box 4004, Terminal A, Toronto.

Lear License to Lucas-Rotax

A licencing agreement has been signed under which pumps and check valves developed by Lear Inc., will be manufactured in Canada by Lucas-Rotax Ltd. of Toronto. The new licencing agreement is part of an expanding global concept in the Lear organization, under which licencing agreements are being entered into with established companies throughout the free world.

The Lear lubrication and scavenge pumps to be built in Canada under the new agreement, will be used initially for the J79 engine being built by Orenda Engines Ltd. for the CF-104G.

Under an arrangement with Lucas-Rotax, Lear may eventually undertake the production under licence of some Lucas-Rotax products in the U.S.

Subcontract for Avro

Announcement has been made of a \$2.6 million subcontract placed with Avro Aircraft Ltd. for the manufacture of air ducts and scoops for the CF-104 aircraft program. Contract was let by Canadair Ltd., prime contractors for the RCAF Starfighter.

At the same time, Canadair Ltd., announced the letting of another CF-104



MOCK-UP STARFIGHTER: Representatives of the DDP and the RCAF are shown at the Lockheed plant at Burbank, Calif., with a mock-up model of the F-104G. This is the model which is going into production at Canadair Ltd., Montreal. The G model of the Starfighter has been adopted by Canada, Belgium, The Netherlands, West Germany and Japan. Note wingtip-mounted Sidewinder.

subcontract, this one worth \$2.4 million to Canadian Car Co. Ltd., Fort William, Ont. CanCar will be producing forward fuselage structures.

These will be followed by orders to other experienced companies in several parts of Canada for other work on the 104. Among them will be orders for nosewheel and main undercarriage gear, various hydraulic systems, and raw materials. Some of these contracts have already been put out for competitive tender and will be let as soon as possible.

After Canadair's production of major components and assembly of the complete aircraft, the first CF-104 is scheduled to be test-flown in the spring of 1961.

Change of Name at DHC

The de Havilland Aircraft of Canada Ltd., has changed the name of the company's Guided Missiles Division to that of Special Products Division.

The new name reflects the changed emphasis in the activities of the Division. The company intends to achieve diversification into the non-defence field, while continuing to provide specialized equipment for defence requirements.

Major activities of the Special Products Division are presently concentrated in the field of infrared systems, static transistorized power supplies, thermionic and other advanced

power developments, instrumentation, pneumatic, hydraulic and electrical control systems.

Loan Legislation Doomed?

Proposed U.S. legislation authorizing U.S. government guaranteed loans to stimulate the purchase of cargo aircraft, now appears almost certainly to be doomed. The legislation, if passed, could cripple Canadair's efforts to sell its CL-44 cargo transport in the U.S. as the loans would be available to assist financing of U.S.-built aircraft only.

Sponsored by Senators A. S. Mike Monroney and Stuart Symington, the bill provides for U.S. government guarantee of loans up to \$75 million for an individual airline for the purchase of cargo aircraft approved by the Department of Defense and the FAA. The measure is supported by the Department of Defense, the FAA and the CAB. However, it is being vigorously opposed by most major U.S. airlines, including American Airlines, Eastern Air Lines, The Flying Tiger Line and PAA.

Slick Airways is the most enthusiastic operator proponent of the bill. Slick has just about completed arrangements to buy two CL-44s and plans call for the purchase of a total of four. These are to be financed under the same Canadian Government guaranteed scheme as made possible CL-44 sales

to the Flying Tigers and Seaboard & Western. However, Slick also wishes to buy some cargo Boeing 707s, and the passage of the proposed U.S. legislation could make this possible.

The legislation is before the Senate Aviation subcommittee, which Senator Monroney heads, where it has run into opposition from committee members. A news report from Washington said Sen. Monroney had conceded in an interview that though he was making every effort to keep the legislation moving, the prospect of progress didn't look very good.

X-Ray & Radium

X-Ray & Radium Industries Ltd. has been sold to its employees who have formed a new company to continue its activities. The new firm will be called X-Ray & Radium Ltd.

The assets of Dial & Instrument Finishers Ltd., manufacturers of aircraft dials and edged lighting for instrument panels, were also acquired by the new company. X-Ray and Radium Ltd., operates plants at Toronto, Montreal and Vancouver, with offices in all principal cities in Canada.

Canadair Talks to CAB

A Canadair team appeared before the U.S. Civil Aeronautics Board last month in support of present and future buyers of commercial-version CL-44's for airline operations, and explained officially the capabilities and economics of this aircraft.

The CAB hearings were held to determine "whether the public convenience and necessity require" that in the cases of specified airlines, including the Flying Tiger Line and Slick Airways which now have CL-44's on order, certificates should be: (1) Amended or suspended insofar as they permit interstate transportation of freight. (2) Renewed in their authority to carry mail; and (3) Relieved of the present conditions which limit the lines to carrying mail on a non-subsidy basis.

DHC Omits Dividend

Due to the fact that earnings for 1959 were insufficient to justify dividends, The de Havilland Aircraft of Canada Ltd., omitted the dividend on Class A stock normally paid about this time of year. For the past two years in succession, a \$5 dividend was paid. A company spokesman has stated,

however, that the company is optimistic about the future.

Missile Work for CL

Canadair Ltd. has been awarded a contract by the Raytheon Co. of Waltham, Mass., for the production of tail cones for Raytheon's Hawk missile. The Hawk is presently in use with the U.S. Army.

The present order, received by Canadair's Missiles & Systems Div., is for 136 sets and has a value of \$20,000. The work will be carried out between April and the late summer.

The Final Ignominy

Scrap resulting from the termination of the Arrow program brought the Government \$304,370, according to a return tabled in Commons March 7.

The total of 2,785 tons of scrap, mostly steel, was sold through Crown Assets Disposal Corp. The largest single sale amounted to \$169,895 and was to Lax Bros. Ltd. of Hamilton.

And to City Surplus Sales Co. of Toronto, the end of the \$400 million program meant only a \$15 purchase of scrap material.

F-104's in Production

Canadair Ltd. starts production of the first sub-assemblies for West Germany's Starfighters in mid-March. Delivery to the Lockheed plant in California is scheduled for July.

With six pilot assembly sets of fabricated components and approximately 6,000 tools supplied by Lockheed, Canadair is producing the empennage, complete wing and aft fuselages for West Germany's F-104Gs.

The Canadian and U.S. production of Starfighters for the Luftwaffe preceeds production by the West German manufacturers under a licence agreement with Lockheed. West Germany will get 30 two-seat F-104Fs and 66 single-seat Starfighters as a result of joint Canadian-U.S. production. An additional 560 F-104s will be built in Germany.

Contracts Awarded

Contractors awarded business in excess of \$10,000 by the Department of Defence Production during the period January 1-31, 1960, include the following. The list does not include orders placed by the Department outside Canada, or with other agencies or increases in orders placed earlier — nor do orders classified as secret appear here.

Names appearing in bold face are current AIRCRAFT advertisers.

Abercorn Aero Ltd., Montreal, \$67,000 for repair & overhaul of air-sea rescue equipment during year ending March 31/61.

Avro Aircraft Ltd., Toronto, \$562,151 for aircraft armament equipment.

British American Oil Co. Ltd., Toronto, \$332,133 for aviation gasoline during year ending March 31/61.

Canadair Ltd., Montreal, \$42,756 for aircraft ground handling equipment.

Canadian Westinghouse Co. Ltd., Ottawa, \$12,878, for aerodrome lighting equipment.

Collins Radio Co. of Canada Ltd., Toronto, \$66,753, for electronic equipment.

De Havilland Aircraft of Canada Ltd., Toronto, \$14,640 for aero engine components.

Imperial Oil Ltd., Ottawa, \$2,534,280 for aviation turbine fuel during year ending March 31/61.

Imperial Oil Ltd., Ottawa, \$735,932 for aviation gasoline during year ending March 31/61.

Jarry Hydraulics Ltd., Montreal, \$13,833 for electrical equipment.

MEL Sales Ltd., Toronto, \$20,750 for radar test sets.

North Star Oil Ltd., Winnipeg, \$2,348,600 for aviation turbine fuel during year ending March 31/61.

Northern Electric Co. Ltd., Ottawa, \$5,472,776 for airborne electronic equipment.

Pioneer Parachute Co. of Canada Ltd., Smiths Falls, Ont. \$28,088 for panel markers.

Sperry Gyroscope Co. of Canada Ltd., Montreal, \$84,027 for technical study.

Bogue Electric of Canada Ltd., Ottawa, \$126,592 for supply, installation and testing of group electrical controls for high speed wind tunnel — Uplands, Ont.

Canadian Vickers Ltd., Montreal, \$221,215 for manufacture and installation of transonic

section and model access platform for NAE high speed wind tunnel at Uplands, Ont.

Aviation Electric Ltd., Montreal, \$176,000 for accelerometers.

Avro Aircraft Ltd., Toronto, \$668,754, for technical publications.

Canadair Ltd., Montreal, \$107,300 for aircraft electrical and engine accessories.

Canadair Ltd., Montreal, \$113,700 for aircraft components.

Carriere & MacFeeters Ltd., Toronto, \$110,000 for repair and overhaul of aircraft instruments during period ending March 21/60.

De Havilland Aircraft of Canada Ltd., Toronto, \$20,000 for airframe components during two years ending March 31/62.

Fairey Aviation Co. of Canada Ltd., Dartmouth, N.S., \$35,263 for technical publications.

Fairey Aviation Co. of Canada Ltd., Dartmouth, \$230,000 for aircraft components.

Honeywell Controls Ltd., Leaside, Ont. \$33,168 for aircraft instruments.

Imperial Oil Ltd., Ottawa, \$13,623 for aviation gasoline during year ending March 31/61.

Shell Oil Co. of Canada Ltd., Toronto, \$39,591 for aviation gasoline during period ending March 31/60.

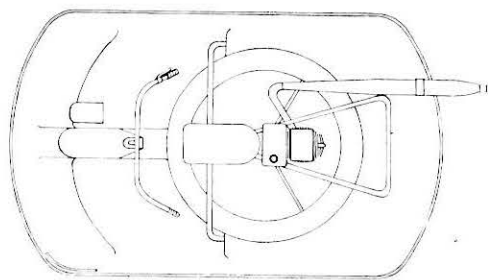
Shell Oil Co. of Canada Ltd., Toronto \$50,400 for Aviation turbine fuel during year ending March 31/61.

Timmins Aviation Ltd., Montreal, \$160,710 for repair of aircraft.

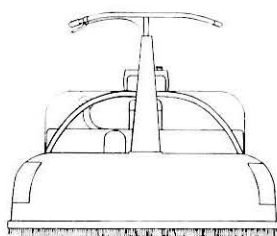
York Gears Ltd., Toronto, \$235,000 for aircraft instrument components.



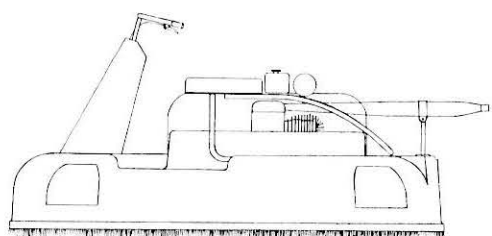
BELL AIR SCOOTER: Technically known as an air cushion vehicle, this new Bell machine is 30" high, 53" wide, 85" long and weighs 160 lbs. A 12-hp, 2 cycle motorscooter engine using a gas and oil mixture for fuel turns a fan of 30" diameter; the resulting air blast lifts the vehicle about two-and-one-half inches off the ground. Driver shifts his weight to turn and leans forward or back to go in either of those directions.



TOP



FRONT



SIDE

The Airborne Services



LATEST IN BOEING B-52 SERIES is B-52H, shown in drawing above. Powered by eight P & W TF33 turbofans, the "H" will have a range in excess of the "more than 9000 miles" of the B-52G. Two Hound Dog missiles will be carried. Pods between engines hold rockets for use as penetration aids.

Defence Budget Cut

The Government has slashed the 1960-61 defence budget by six per cent or nearly \$100 million.

It presented to Parliament Feb. 4 a defence estimate of \$1,596,272,266, a decrease of \$98,921,740 from the current fiscal year which ends March 31. Is is the smallest defence budget since 1951-52.

For the armed forces, the real bad news was the 13 percent chop in estimated expenditures on weapons and equipment. This was a cut of \$44 million to \$280 million.

Cost of maintaining the forces and their present weapons was estimated at \$1,118,353,453, a slight decrease of \$10 million effected through lower expenditures on repair and upkeep of equipment.

Cleanup cost of the Arrow now is estimated at less than \$45 million with \$1.5 million going toward this cost in the 1960-61 budget.

Other amounts contained in the estimates: \$75 million for the CF-104 program; \$37 million for the CL-44; \$22 million for Bomarc-SAGE-radars; \$7 million for the Argus; \$7 million for the Albatross; \$28 million for RCAF electronics, mainly TACAN and UHF; \$12 million for Navy Electronics, mainly sonar; \$1.7 million for naval aircraft.

There is no provision in the estimates for a new RCAF manned interceptor, Army helicopters or the La-crosse ground-to-ground missile.

The total for RCAF aircraft and engines is slashed to \$131,698,000 from \$164,817,000. The amount for Defence Research Board development is cut to \$14,216,000 from \$21,565,000. The total for construction is down to \$102 million from \$124 million.

Totals by services with 1959-60 figures in brackets: Navy, \$271,300,557 (\$287,492,000); Army, \$421,297,000 (\$448,853,000); RCAF, \$767,929,000 (\$811,304,000).

F-106 Darts in Service

By autumn 1960, some 13 USAF squadrons in the North American air defence system (NORAD) will be operating the supersonic F-106 Delta Dart. Six tactical squadrons are now equipped with the long-range all-weather Dart, and seven more will be flying the Convair-built fighter by September.

Next squadron in line for the new equipment is the 5th Fighter Interceptor Squadron at Minot AFB, Minot, North Dakota. The 5th will receive its Darts in March.

Guessing Game

Speculation has started on possible successors to the RCAF's two top posts those of Chief of the Air Staff and Deputy Commander of North American Air Defence Command, both of which may become vacant this year. The current CAS is Air Marshal Hugh Campbell, who was appointed to the post in September of 1957, the same month in which Air Marshal C. R.

Slemon went to Colorado Springs as NORAD's second in command. Previously, A/M Slemon had been CAS.

Ottawa speculation has it that Air Marshal (Acting) C. R. Dunlap, now with NATO as Deputy Chief of Staff Operations at SHAPE headquarters in Paris, may be appointed to either the CAS's job or that of NORAD Deputy Commander. Another name mentioned in connection with the CAS post is that of Air Vice Marshal John A. Easton, the RCAF's Air Member for Technical Services since 1958.

In earlier sessions of name guessing, the speculators have had A/M Slemon retiring from the service, with A/M Campbell succeeding him at NORAD.

Air Cadet Ceiling

Although most Air Cadet squadrons in Canada have long lists of boys waiting to join up, the Government has so far refused to increase the ceiling figure of 25,500 cadets. One possible reason that competition is keen is the flying scholarship plan by which cadets are given flying training to private pilot level. Last year, this plan graduated a total of 387 pilots.

Of these, the RCAF sponsored 250 while the remainder were sponsored privately by funds from the Air Cadet League itself. Some \$59,000 of squadron funds was spent in this way, all of it raised by local campaigning.

Postings & Careers

•Group Captain Leonard A. Costello has been appointed Chaplain General of the Armed Forces (Roman Catholic) in the rank of Air Commodore. He succeeds the Right Reverend Ronald MacLean who retired at the end of last month. For the past 14 years, A/C Costello has been the RCAF's Director of Religious Administration (RC).

•Lt.-Cdr. K. S. Nicolson has been appointed to take command of 870 Squadron of the RCN. Composed of Banshee all-weather fighters, the squadron normally operates from either HMCS Shearwater, or the aircraft carrier HMCS Bonaventure.

•Lt.-Cdr. W. J. Walton has been promoted to the rank of Commander and appointed in command of the RCN's VS 880 Squadron. The squadron is composed of Tracker ASW aircraft and normally operates from HMCS Shearwater or the aircraft carrier HMCS Bonaventure.